

WHAT IS CLAIMED IS:

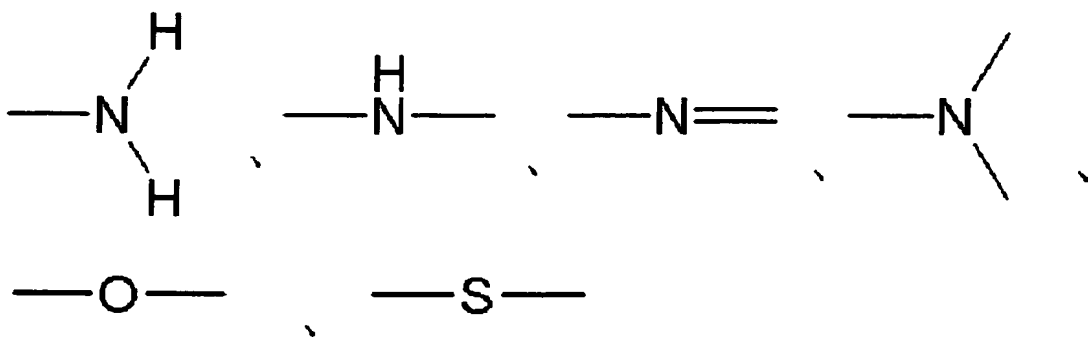
1. An ionic conductor having:
 - a derivative in which an ion-dissociative group is
 - 5 bound to a carbonaceous substance composed of at least one species selected from the group consisting of fullerene molecule, cluster mainly composed of carbon, and structure of linear or tubular carbon; and
 - a polymer of a substance having a basic group.
- 10 2. The ionic conductor as claimed in Claim 1, wherein said derivative comprises a chemical or physical, coupled or crosslinked product of said carbonaceous substances.
- 15 3. The ionic conductor as claimed in Claim 1, in which said derivative bound with said ion-dissociative group and the polymer of said substance having said basic group are mixed.
- 20 4. The ionic conductor as claimed in Claim 1, wherein at least one of said ion-dissociative group is an acidic functional group.
- 25 5. The ionic conductor as claimed in Claim 1, wherein a ratio of said ion-dissociative group and said basic group (said basic group/said ion-dissociative group) is 20 or less on the molar basis.
- 30 6. The ionic conductor as claimed in Claim 1, wherein said ion-dissociative group is at least one

species selected from the group consisting of $-\text{SO}_3\text{M}$, $-\text{PO}(\text{OM})_2$, $-\text{SO}_2\text{NMSO}_2-$, $-\text{SO}_2\text{NM}_2$, $-\text{COOM}$, $=\text{CPO}(\text{OM})_2$ and $=\text{C}(\text{SO}_3\text{M})_2$ (where, M is a cation producible group).

5 7. The ionic conductor as claimed in Claim 1,
 wherein at least a functional group having said ion-
 dissociative group is bound to said carbonaceous
 substance, said functional group being at least one
 species selected from the group consisting of $-\text{A-SO}_3\text{M}$, $-\text{A-PO}(\text{OM})_2$, $-\text{A-SO}_2\text{NMSO}_2-\text{R}^0$, $-\text{A-SO}_2\text{NM}_2$ and A-COOM [where, A
 10 represents $-\text{O}-$, $-\text{R}-$, $-\text{O-R}-$, $-\text{R-O}-$, $-\text{O-R-O}-$ or $-\text{R-O-R}'-$ (R
 and R' are either of alkyl component and fluoroalkyl
 component respectively expressed by C_xH_y and $\text{C}_x\text{F}_y\text{H}_z$ ($1 \leq$
 $x \leq 20$, $1 \leq y \leq 40$, $0 \leq z \leq 39$, which may be identical to
 15 or different from each other), M represents a cation
 producing group, and R^0 represents $-\text{CF}_3$ or $-\text{CH}_3$]].

8. The ionic conductor as claimed in Claim 1,
 wherein the polymer of said substance having said basic
 20 group is a polymer of a compound containing at least any
 one of N atom, O atom and S atom.

9. The ionic conductor as claimed in Claim 1,
 wherein the polymer of said substance contains at least
 25 any one of structural components expressed by the
 structural formulae below:



10. The ionic conductor as claimed in Claim 1,
 wherein said basic portion of the polymer of said
 5 substance is at least any one species selected from the
 group consisting of amino group, pyrrolidone group,
 pyridine group, imidazole group, pyrimidine group,
 piperazine group, pyrrole group, pyrrolidine group,
 pyrazole group, benzimidazole group, phenylimidazole
 10 group and pyrazine group.

11. The ionic conductor as claimed in Claim 8,
 wherein a polymer of said compound containing N atom is a
 polymer of a heterocyclic compound.

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12. The ionic conductor as claimed in Claim 9,
 wherein the polymer of said compound having said basic
 group is at least any one species selected from the group
 consisting of polymers having a structure of imidazole,
 20 pyrrole, pyrrolidine, pyridine, pyrazole, benzimidazole,
 phenylimidazole, vinylimidazole, pyrazine, piperazine,
 oxazole, isooxazole, thiazole, isothiazole, furan,
 thiophene, and derivatives of them.

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13. A method of manufacturing an ionic conductor,

having:

a step of dissolving a derivative in which an ion-dissociative group is bound to a carbonaceous substance composed of:

5 at least one species selected from the group consisting of:

 fullerene molecule;

 cluster mainly composed of carbon; and

 structure of linear or tubular carbon; and

10 a polymer of a substance having a basic group, into a solvent to thereby prepare a homogeneous solution; and

 a step of removing said solvent.

15 14. A method of manufacturing an ionic conductor, having:

 a step of dissolving a derivative in which an ion-dissociative group is bound to a carbonaceous substance composed of:

20 at least one species selected from the group consisting of:

 fullerene molecule;

 cluster mainly composed of carbon; and

 structure of linear or tubular carbon; and

25 a polymer of a substance having a basic group, into respective solvents to thereby prepare respective homogeneous solutions; and

 a step of mixing these homogeneous solutions and recovering an insoluble component.

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 15. A method of manufacturing an ionic conductor,

having:

a step of mixing a derivative in which an ion-dissociative group is bound to a carbonaceous substance composed of:

5 at least one species selected from the group consisting of:

fullerene molecule;

cluster mainly composed of carbon; and

structure of linear or tubular carbon; and

10 a monomer of a substance having a basic group; and

a step of allowing said mixture to polymerize to thereby manufacture an ionic conductor having said derivative and the polymer of said substance having said
15 basic group.

16. The method of manufacturing an ionic conductor as claimed in any one of Claims 13, 14 and 15, wherein a molar ratio of said ion-dissociative group and said basic
20 group is adjusted to 20 or less.

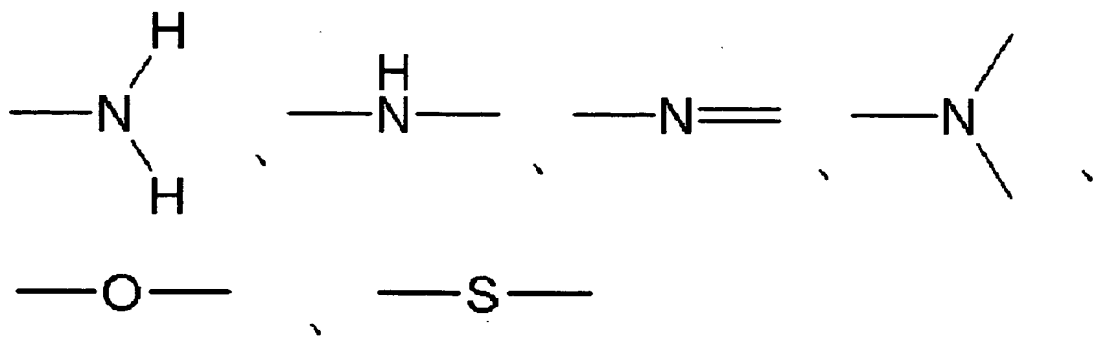
17. The method of manufacturing an ionic conductor as claimed in any one of Claims 13, 14 and 15, using, as said ion-dissociative group, at least any one species
25 selected from the group consisting of $-\text{SO}_3\text{M}$, $-\text{PO}(\text{OM})_2$, $-\text{SO}_2\text{NMSO}_2-$, $-\text{SO}_2\text{NM}_2$, $-\text{COOM}$, $=\text{CPO}(\text{OM})_2$ and $=\text{C}(\text{SO}_3\text{M})_2$ (where, M represents a cation producing group).

18. The method of manufacturing an ionic conductor
30 as claimed in any one of Claims 13, 14 and 15, using, as said derivative, said carbonaceous substance bound with a

functional group having at least said ion-dissociative group, said functional group being at least one species selected from the group consisting of $-A-SO_3M$, $-A-PO(OM)_2$, $-A-SO_2NMSO_2-R^0$, $-A-SO_2NM_2$ and $A-COOM$ [where, A represents
 5 $-O-$, $-R-$, $-O-R-$, $-R-O-$, $-O-R-O-$ or $-R-O-R'-$ (R and R' are either of alkyl component and fluoroalkyl component respectively expressed by C_xH_y and $C_xF_yH_z$ ($1 \leq x \leq 20$, $1 \leq y \leq 40$, $0 \leq z \leq 39$, which may be identical to or different from each other), M represents a cation
 10 producing group, and R^0 represents $-CF_3$ or $-CH_3$)].

19. The method of manufacturing an ionic conductor as claimed in any one of Claims 13, 14 and 15, wherein the polymer of said substance having said basic group is
 15 a polymer of a compound containing at least any one of N atom, O atom and S atom.

20. The method of manufacturing an ionic conductor as claimed in any one of Claims 13, 14 and 15, wherein
 20 the polymer of said substance contains at least any one of structural components expressed by the structural formulae below:



25 21. The method of manufacturing an ionic conductor

as claimed in any one of Claims 13, 14 and 15, using, as said basic portion of the polymer of said substance, at least any one species selected from the group consisting of amino group, pyrrolidone group, pyridine group, imidazole group, pyrimidine group, piperazine group, pyrrole group, pyrrolidine group, pyrazole group, benzimidazole group, phenylimidazole group and pyrazine group.

22. The method of manufacturing an ionic conductor as claimed in Claim 19, wherein a polymer of said compound containing N atom is a polymer of a heterocyclic compound.

23. The method of manufacturing an ionic conductor as claimed in Claim 20, wherein the polymer of said compound having said basic group is at least any one species selected from the group consisting of polymers having a structure of imidazole, pyrrole, pyrrolidine, pyridine, pyrazole, benzimidazole, phenylimidazole, vinylimidazole, pyrazine, piperazine, oxazole, isooxazole, thiazole, isothiazole, furan, thiophene, and derivatives of them.

24. An electrochemical device comprising a negative electrode, a positive electrode, and an ionic conductor held therebetween, said ionic conductor having a derivative in which an ion-dissociative group is bound to a carbonaceous substance composed of at least one species selected from the group consisting of fullerene molecule, cluster mainly composed of carbon, and

structure of linear or cylindrical carbon; and a polymer of a substance having a basic group.

25. The electrochemical device as claimed in Claim
5 24, wherein said ionic conductor is the ionic conductor described in any one of Claims 2 to 12.

26. The electrochemical device as claimed in Claim 24, being configured as a fuel cell.